WHAT IS CLAIMED IS:

1. An automatic sound field correcting system in an audio system for supplying a plurality of input audio signals to a plurality of sound generating means via a plurality of signal transmission lines,

each of the plurality of signal transmission lines including an equalizer for adjusting a frequency characteristic of the audio signal, a channel-to-channel level adjusting means for adjusting a level of the audio signal, and a delaying means for adjusting a delay time of the audio signal, so that the input audio signals are supplied to said sound generating means via said equalizers, said channel-to-channel level adjusting means, and said delaying means,

said correcting system comprising:

a noise generating means for supplying a noise to respective signal transmission lines independently in correcting a sound field;

detecting means for detecting reproduced sounds of the noise reproduced by said sound generating means;

frequency characteristic correcting means for correcting frequency characteristics of the equalizers based on detection results of said detecting means;

channel-to-channel level correcting means for correcting an adjusted amount of said plurality of channel-to-channel level adjusting means based on the detection results

of said detecting means; and

phase characteristic correcting means for calculating phase characteristics of the reproduced sounds reproduced by said sound generating means based on the detection results of said detecting means and also correcting delay times of said delaying means based on calculated phase characteristics.

2. The automatic sound field correcting system according to claim 1, further comprising:

a controlling means for causing said channel-to-channel level correcting means to correct an adjusted amount of said channel-to-channel level adjusting means and causing said phase characteristic correcting means to correct the delay times of said delaying means, after causing said frequency characteristic correcting means to correct the adjusted amount of said equalizers.

3. The automatic sound field correcting system according to claim 1, wherein

said noise generating means supplies a pink noise as the noise to said equalizers.

4. The automatic sound field correcting system according to claim 2, wherein

said channel-to-channel level correcting means corrects respective adjusted amounts of said plurality of channel-to-channel level adjusting means such that levels of reproduced sounds reproduced by said plurality of sound generating means is made substantially equal over a full audio frequency band.

5. An automatic sound field correcting system in an audio system for supplying a plurality of input audio signals to all frequency band sound generating means and a low frequency band exclusively reproducing sound generating means via a plurality of signal transmission lines,

each of the plurality of signal transmission lines including an equalizer for adjusting a frequency characteristic of the audio signal, a channel-to-channel level adjusting means for adjusting a level of the audio signal, and a delaying means for adjusting a delay time of the audio signal, so that the input audio signals are supplied to said sound generating means via said equalizers, said channel-to-channel level adjusting means, and said delaying means,

said correcting system comprising:

a noise generating means for supplying a noise to said respective signal transmission lines independently in correcting a sound field;

detecting means for detecting reproduced sounds of the noise reproduced by said sound generating means;

frequency characteristic correcting means for correcting frequency characteristics of said equalizers based on detection results of said detecting means;

first channel-to-channel level correcting means for correcting an adjusted amount of said plurality of channel-to-channel level adjusting means of the signal transmission lines, in which the all frequency band sound generating means are provided, out of said plurality of channel-to-channel level adjusting means based on the detection results of said detecting means;

phase characteristic correcting means for calculating phase characteristics of the reproduced sounds reproduced by respective sound generating means based on the detection results of said detecting means and also correcting delay times of said delaying means based on calculated phase characteristics; and

second channel-to-channel level correcting means for correcting an adjusted amount of the plurality of channel-to-channel level adjusting means of the signal transmission lines, in which the low frequency band exclusively reproducing sound generating means are provided, based on the detection results of said detecting means.

6. The automatic sound field correcting system according to claim 5, further comprising:

controlling means for causing said first channel-to-channel level correcting means to perform the correction, then causing said phase characteristic correcting means to perform the correction, and then causing said second channel-to-channel level correcting means to perform the correction after causing said frequency characteristic correcting means to perform the correction.

7. The automatic sound field correcting system according to claim 5, wherein

said second channel-to-channel level correcting means corrects an adjusted amount of said channel-to-channel level adjusting means such that a sum of a spectrum average level of the reproduced sound reproduced by all frequency band sound generating means in a low frequency band and a spectrum average level of the reproduced sound reproduced by a low frequency band exclusively reproducing sound generating means in the low frequency band and a spectrum average level of the reproduced sound in a middle/high frequency band reproduced by the all frequency band sound generating means are set equal to a ratio of target curve data.

8. The automatic sound field correcting system according to claim 1 or 5, wherein

said phase characteristic correcting means calculates phase characteristics of the reproduced sounds based on detection results of said detecting means by a correlation calculating approach.

9. A sound field correcting method in an audio system including a plurality of signal transmission lines for supplying a plurality of input audio signals separately to all frequency band sound generating means and a low frequency band exclusively reproducing sound generating means, each of the plurality of signal transmission lines including an equalizer for adjusting a frequency characteristics of the audio signal, a channel-to-channel level adjusting means for adjusting a level of the audio signal, and a delaying means for adjusting a delay time of the audio signal, so that the input audio signals are supplied to said sound generating means via said equalizers, said channel-to-channel level adjusting means, and said delaying means,

said method comprising:

a first step of measuring reproduced sounds reproduced by said all frequency band sound generating means and a low frequency band exclusively reproducing sound generating means by inputting a noise, and then correcting frequency

characteristics of said equalizers based on measured results;

a second step of measuring the reproduced sounds reproduced by said all frequency band sound generating means and said low frequency band exclusively reproducing sound generating means by inputting the noise, and then correcting an adjusted amount of said channel-to-channel level adjusting means for said all frequency band sound generating means based on the measured results;

a third step of measuring the reproduced sounds reproduced by said all frequency band sound generating means and said low frequency band exclusively reproducing sound generating means by inputting the noise, and then correcting delay times of said delaying means based on the measured results;

a fourth step of measuring independently reproduced sounds reproduced by said all frequency band sound generating means and reproduced sounds reproduced by said low frequency band exclusively reproducing sound generating means; and

a fifth step of correcting an adjusted amount of said channel-to-channel level adjusting means based on measured results measured by the fourth step such that a sum of a spectrum average level of the reproduced sounds reproduced by said all frequency band sound generating means in a low frequency band and a spectrum average level of the reproduced sound reproduced by said low frequency band exclusively reproducing sound

generating means in the low frequency band and a spectrum average level of the reproduced sound reproduced by said all frequency band sound generating means in a middle/high frequency band are set equal to a ratio of target curve data.

10. The sound field correcting method according to claim 9, wherein

measurement of the reproduced sounds in the first step is performed at plural times, and then the frequency characteristics of said equalizers are corrected based on plural times measured results.

11. The sound field correcting method according to claim 9, wherein

measurement of the reproduced sounds in the second step is performed at plural times, and then the adjusted amount of said channel-to-channel level adjusting means is corrected based on plural times measured results.

12. The sound field correcting method according to claim 9 or 10, wherein

the frequency characteristics of said equalizers are corrected based on multiplied results of the measured result and the target curve data in the first step.